

1 WHAT I CLAIM:

5 1. In a hollow container suitable for containing fluid or granules, said container comprising a body and a neck, and having an opening in the neck defined by a rim through which contents of the container may flow, said container optionally having an external thread or other mechanical
10 detent on the neck suitably adapted to receive a cap with internal threads or other mechanical means for retaining the cap in place on the neck of the container,

15 a removable sealing device, said device comprised of

20 a membranous seal, comprised of a flexible, frangible material having a reasonably low coefficient of friction, said membranous seal having a sealing component and a tab component,

25 with the sealing component suitably shaped to completely cover the opening in the neck of the container and the rim of the opening, and

30 with the tab component having a substantially elongated rectangular shape, with an attachment end and a gripping end located opposite the attachment end, and with a first edge and a second edge opposite the first edge,

35 the attachment end of the tab component attached to and integrated with the sealing component such that the tab component is oriented substantially perpendicular to the sealing component, and

40 the gripping end of the tab component having a greater width than the width of the remainder of the tab component or having any other suitable shape so as to make the tab component convenient to grasp; and

1 a sleeve, comprised of a flexible material having a reasonably low coefficient of
friction, said sleeve having openings at either end and being suitably adapted to be positioned
5 over and around the neck of the container such that the sleeve fits snugly about the neck of the
container and below the external thread or other mechanical detent on the neck;

10 whereby the tab component is folded back upon the sealing component, then folded
downward along the neck of the container and over the external thread or other mechanical detent
15 on the neck, such that the tab component is positioned between the sleeve and the neck of the
container with the gripping end of the tab component extending from the lower opening of the
sleeve.

20 2. The device of claim 1, wherein the membranous seal is comprised of multiple layers, with
the outer surfaces of the outer layers having reasonably low coefficients of friction.

25 3. The device of claim 1, wherein the gripping end of the tab component contains a central
aperture, suitably adapted to accommodate a user's finger.

30 4. The device of claim 1, wherein the membranous seal further comprises
a first crimp, extending laterally across the width of the tab component from the first edge
35 to the second edge and positioned where the attachment end of the tab component meets the
sealing component; and

40 a second crimp, extending laterally across the width of the tab component from the first
edge to the second edge and positioned between the first crimp and the gripping end of the tab
component such that the distance between the first crimp and the second crimp is substantially
45 identical to the diameter of the opening of the neck of the container;

1 whereby the first crimp and the second crimp facilitate the folding of the tab component
back upon the sealing component and downward along the neck of the container.

5 5. The device of claim 1, wherein the sealing component further comprises
a first break line, having a first end and a second end, formed into the sealing component
10 such that the sealing component is weakened along the first break line yet still retains the ability to
provide an unbroken seal over the opening of the neck of the container; and

15 a second break line, having a first end and a second end, formed into the sealing component
such that the sealing component is weakened along the second break line yet still retains the ability
to provide an unbroken seal over the opening of the neck of the container;

20 whereby the first end of the first break line is adjacent to the first edge of the tab
component and the first break line extends across and transects the sealing component, and the first
25 end of the second break line is adjacent to the second edge of the tab component and the second
break line extends across and transects the sealing component, with the first break line and the
second break line diverging as they extend across the sealing component such that the distance
30 between the second ends of the first and second break lines is greater than the distance between the
first ends of the first and second break lines.

35 6. The device of claim 5, wherein the sealing component further comprises
a first notch located adjacent to the first end of the first break line; and
40 a second notch located adjacent to the first end of the second break line;

45 whereby the first notch and the second notch facilitate tearing of the sealing component
along the first and second break lines when an upward or lateral force is applied to the tab
component.

1 7. The device of claim 1, further comprising
a lever, constructed of a substantially rigid material and having a first end and a second
5 end, said lever being attached to the sealing component with the first end of the lever positioned
adjacent to the attachment end of the tab component and the second end of the lever positioned
over the sealing component, such that the first end of the lever is lifted upward when an upward or
10 lateral force is applied to the tab component, causing the second end of the lever to be forced
downward, rupturing the sealing component.

15 8. The device of claim 7, wherein the second end of the lever is shaped into a point to facilitate the lever's ability to rupture the sealing component.

20 9. The device of claim 1, further comprising multiple membranous seals, said membranous
seals joined together in a continuous length, with the gripping end of the tab component of each
25 membranous seal attached to the sealing component of an adjacent membranous seal, and with
serrations formed at the junction of each membranous seal with each adjacent membranous seal.

30 10. A method of sealing containers involving
a plurality of hollow containers suitable for containing fluid or granules, each container
35 comprising a body and a neck, with an external thread or other mechanical detent on the neck
suitably adapted to receive a cap with internal threads or other mechanical means for retaining the
cap in place on the neck of the container, said container having an opening in the neck defined by a
40 rim through which contents of the container may flow, and said container filled with its intended
contents;

1 a plurality of membranous seals, each membranous seal comprised of a flexible, frangible
material having a reasonably low coefficient of friction and having a sealing component and a tab
5 component, with the sealing component suitably shaped to completely cover the opening in the
neck of a container and the rim of the opening, and with the tab component having a substantially
10 elongated rectangular shape, with an attachment end and a gripping end located opposite the
attachment end, and the attachment end of the tab component attached to and integrated with the
sealing component such that the tab component is oriented substantially perpendicular to the
15 sealing component, with the membranous seals joined together in a continuous length, with the
gripping end of the tab component of each membranous seal attached to the sealing component of
an adjacent membranous seal, with serrations formed at the junction of each membranous seal with
20 each adjacent membranous seal;

25 a plurality of sleeves, each sleeve comprised of a flexible material having a reasonably low
coefficient of friction and having openings at either end, being suitably adapted to be positioned
over and around the necks of the containers such that the sleeves fit snugly about the necks of the
30 containers and below the external threads or other mechanical detents on the necks, one sleeve per
neck;

35 a plurality of caps, each cap having internal threads or other mechanical means suitably
adapted to retaining the cap in place on the necks of the containers, one cap per neck;

40 a means suitably adapted to convey the plurality of containers in an orderly process;

45 a means suitably adapted for aligning a terminal membranous seal of the continuous length
of membranous seals over a container;

1 a means suitably adapted for attaching the terminal membranous seal to the rim of the container;

5 a means suitably adapted for separating the newly attached terminal membranous seal from the remaining continuous length of membranous seals;

10 a means suitably adapted for folding the tab component of each attached membranous seal over the sealing component of that membranous seal and down along the neck of the container to

15 which the membranous seal is attached;

20 a means suitably adapted for aligning one of the plurality of sleeves over the neck of the container and for positioning that sleeve over the neck of the container and over the tab component of the membranous seal attached to the container such that the sleeve fits snugly about the neck of the container and below the external threads or other mechanical detents on the neck; and

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30 a means suitably adapted for attaching one of the plurality of caps to a container such that the cap is securely attached to the container with the tab component of the membranous seal attached to that container disposed between the internal threads or other mechanical means of the cap and the external threads other mechanical detent of the neck of the container;

35 whereby the following steps are performed:

40 (1) the containers are conveyed in an orderly process, and for each container;

(2) the container is positioned to receive a membranous seal;

(3) one of the plurality of membranous seals joined together in a continuous length is positioned above the container such that the sealing component of the membranous seal is aligned with the opening in the neck of the container;

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1 (4) the membranous seal is attached to the rim of the neck of the container;

5 (5) the membranous seal is separated from the remaining plurality of membranous seals;

5 (6) the container is positioned to permit folding of the tab component of the attached membranous seal;

10 (7) the tab component of the attached membranous seal is folded over the sealing component of the membranous seal and folded down along the neck of the container to which the membranous seal is attached;

15 (8) the container is positioned to receive a sleeve;

20 (9) one of the plurality of sleeves is aligned over the neck of the container and positioned over the neck of the container and over the tab component of the membranous seal attached to the container such that the sleeve fits snugly about the neck of the container and below the external threads or other mechanical detents on the neck of the container;

25 (10) the container is positioned to receive a cap; and

30 (11) one of the plurality of caps is attached to the container.

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